
**MINERAL PRODUCTION IN IOWA
FOR 1915**

BY GEORGE F. KAY

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VALUE OF MINERAL PRODUCTION.

1913.

Coal	\$13,496,710
Clay and clay products.....	5,575,581
Stone and lime	854,814
Gypsum	1,157,939
Lead and zinc	4,150
Mineral waters	7,369
Sand and gravel	528,066
Cement	3,972,876
*Other products	14,840
Total	\$25,612,345

1914.

Coal	\$13,364,070
Clay and clay products.....	6,405,995
Stone and lime	594,681
Gypsum	1,321,457
Lead and zinc	
Mineral waters	30,179
Sand and gravel	556,868
Cement	4,008,915
*Other products	19,700
Total	\$26,301,865

1915.

Coal	\$13,577,608
Clay and clay products	6,749,088
Stone and lime	577,295
Gypsum	1,278,128
Lead and zinc	
Mineral waters	18,534
Sand and gravel	720,795
Cement	4,119,952
*Other products	21,550
Total	\$27,062,950

*Sand-lime brick, mineral paints and natural gas.

¹The mineral statistics were compiled by the Iowa Geological Survey in co-operation with the United States Geological Survey.

In 1915 the value of the mineral production in Iowa was \$27,062,950. This is the highest figure of record for the state, exceeding the value of production in 1914 by \$761,085. The following table shows the value of Iowa's mineral output during each of the past 10 years:

VALUE OF MINERAL PRODUCTION IN IOWA FOR THE YEARS 1906
TO 1915 INCLUSIVE.

1906	.....	\$16,414,447
1907	.....	17,627,925
1908	.....	18,090,447
1909	.....	20,365,721
1910	.....	22,744,572
1911	.....	21,119,111
1912	.....	22,910,066
1913	.....	25,612,345
1914	.....	26,301,865
1915	.....	27,062,950

From this table it will be seen that the value of the output in 1915 exceeded the value of a decade earlier by \$10,648,503. With the exception of the year 1911, the value of each year of the past ten years has been greater than that of the preceding year.

The four most important products of Iowa in order of their value of production are coal, clay and clay products, cement and gypsum. These products in 1915 had a value of \$25,724,776, which was ninety-five per cent of the total value of all the mineral products of the state. The values of coal, clay and clay products, sand and gravel, and cement were greater in 1915 than in 1914 but the values of stone and lime, gypsum, and mineral waters were less in 1915 than in 1914.

The number of mineral producers in Iowa in 1915 was 540; the number in 1914 was 563.

The total production by counties for 1915 is given in Table I.

TABLE I

Value of Total Mineral Production, By Counties, for 1915.

Counties	No. of Producers	Coal	Clay and Clay Products	Stone and Lime	Sand and Gravel	Other Products	Total
Adair	1		*				*
Adams	5	\$ 21,300					\$ 21,300
Allamakee	4		*	\$ 4,123			*
Appanoose	55	2,376,497	*	*			2,401,406
Audubon	5		*		\$ 205		*
Benton	6		*	*			*
Black Hawk	12			8,028	60,315	*	*
Boone	12	329,676	\$ 128,257		*		*
Bremer	4				1,760		1,760
Buena Vista	5		*		*		*
Butler	2				*		*
Calhoun	1		*				*
Carroll	1				*		*
Cass	1		*				*
Cedar	1		*				*
Cerro Gordo	10		1,830,220	*		*	5,076,994
Cherokee	4				25,301		25,301
Chickasaw	1				*		*
Clay	1		*				*
Clayton	3			*	*		*
Clinton	7		*	*	15,545		24,270
Dallas	11	905,355	*				*
Delaware	1		*				*
Des Moines	6		*	*	16,802		37,667
Dickinson	3				*	*	*
Dubuque	16		20,337	68,512	19,674		108,523
Emmet	1				*		*
Fayette	5		*	*	14,218		31,156
Floyd	3		*	*	*		*
Franklin	6		*		1,100		*
Fremont	1		*				*
Greene	2	*					*
Grundy	1		*				*
Guthrie	6	10,887	*				*
Hamilton	2		*				*
Hancock	2		*				*
Hardin	6		*		9,900		94,114
Harrison	1			*	*		*
Henry	3		*	*			*
Howard	2		*	*	*		*
Humboldt	2		*				*
Ia	2				*		*
Iowa	2		*				*
Jackson	3			*	*		*
Jasper	11	555,030	*			*	592,301
Jefferson	6	*	29,493			*	34,008
Johnson	4		*		*		*
Jones	9		*	72,058	*		91,081
Keokuk	9	*	*				*

TABLE I—Continued

Counties	No. of Producers	Coal	Clay and Clay Products	Stone and Lime	Sand and Gravel	Other Products	Total
Kossuth	2		*		*		*
Lee	9		*	53,842	*		62,327
Linn	11		25,675	*	34,695		*
Louisa	5		*	*		\$ 250	8,400
Lucas	1	*					*
Lyon	3				39,921		39,921
Madison	2			*			*
Mahaska	14	395,629	*				*
Marion	20	552,968	*		14,114		*
Marshall	5		*	*	*		*
Mills	4		3,775				3,775
Mitchell	2			*			*
Monroe	17	3,418,329	*				*
Montgomery	1			*			*
Muscatine	9		14,884	*	46,482		*
O'Brien	4				5,836		5,836
Osceola	2				*		*
Page	3	*	*				*
Palo Alto	3				30,022		30,022
Plymouth	6		*		12,484		*
Pocahontas	1			*			*
Polk	44	3,255,677	791,371		146,636	*	*
Pottawattamie	3		23,303				23,303
Poweshiek	4		37,147				37,147
Sac	3		*		*		*
Scott	13		30,833	119,646	*	*	*
Sioux	5				8,510		8,510
Story	5		*		6,997		*
Tama	6		55,458				55,458
Taylor	2	*					*
Union	1		*				*
Van Buren	7	*	*	*	*		*
Wapello	17	549,467	83,662	*	*	*	654,431
Warren	3	*	*				*
Washington	4		40,282				40,282
Wayne	1	*					*
Webster	21	41,025	*		*	1,289,428	2,581,223
Winnebago	2		*		*		*
Winneshiek	2		*		*		*
Woodbury	3		*		*	*	*
Wright	3		*		*		*
County values representing less than three producers and small coal mines		1,165,768	3,634,391	251,086	210,278	4,148,480	14,961,134
Totals	540	\$ 13,577,608	\$ 6,749,088	\$ 577,295	\$ 720,795	\$ 5,438,164	\$ 27,062,950

*Included in County values and totals.

COAL.

Coal has been for many years the chief mineral mined in Iowa, the yearly production for several years having varied up and down between 7,000,000 and 8,000,000 tons. In 1915 the production was 7,614,143 tons with a value of \$13,577,608 at the mines. The five leading coal producing counties in order of tonnage in 1915 were Monroe, Polk, Appanoose, Lucas and Dallas. It is of interest to note that Lucas county now ranks fourth, whereas Mahaska county, which for many years previous to 1914 ranked fourth, dropped to eighth place in 1915. Dallas, Jasper, Marion, Polk and Wapello counties produced a considerably larger tonnage in 1915 than in 1914.

The chief use of Iowa coal is by the railways and for domestic purposes, and the Iowa coal now has keen competition on the markets of Iowa with coal from other states.

The average price of coal at the mines during the year 1915 was \$1.78.

In 1915 there were 15,549 men employed in coal mining in Iowa, in 1914 there were 16,057.

The output, disposition of product, value, average price per ton, average number of days worked, and average number of men employed in 1915 are given, tabulated by counties, in Table II.

TABLE II

Coal Production for Iowa in 1915, By Counties, in Short Tons.

Counties	Loaded at Mine for Shipment	Sold to Local Trade and Used by Employees	Used at Mine for Steam and Heat	Total Quantity	Total Value	Average Price Per Ton	Average Number of Days Active	Average Number of Employees
Adams -----		8,120		8,340	\$ 21,300	\$ 2.55	174	45
Appanoose -----	1,147,423	57,508	20,619	1,225,100	2,376,497	1.94	245	4,139
Boone -----	109,731	41,384	5,145	156,260	329,676	2.11	195	447
Dallas -----	449,262	11,219	10,400	470,881	905,355	1.92	214	863
Guthrie -----		3,968		3,968	10,887	2.74	157	27
Jasper -----	252,096	15,961			555,030	2.07	223	514
Mahaska -----	229,403	13,765	2,618	245,786	395,629	1.61	192	432
Marion -----	322,242	28,116	9,797	360,155	552,968	1.54	218	782
Monroe -----	2,058,876	40,841	57,632	2,157,349	3,418,329	1.87	206	3,704
Polk -----	1,509,531	203,685	31,088	1,744,304	3,255,677		223	2,932
Wapello -----	293,717	15,626	4,650	313,993	549,467		179	589
Webster -----	12,380				41,025		147	79
*Counties with less than three producers and small mines -----	578,917	62,093	6,450	928,007	1,165,768			1,075
Total -----	6,963,698	502,286	148,159	7,614,143	\$13,577,608	\$ 1.78	220	15,549

*Greene, Jefferson, Keokuk, Lucas, Page, Taylor, Van Buren, Warren, Wayne.

Iowa's rank as a coal producing state in 1915 is given in the following table. From this table it is seen that Iowa ranked tenth in tonnage and ninth in value. The same relations prevailed in 1914.

RANK OF LEADING COAL-PRODUCING STATES IN 1915, WITH QUANTITY AND VALUE OF PRODUCT AND PERCENTAGE OF EACH².
PRODUCTION.

Rank	State	Quantity (short tons)	Percentage of Total Production
1	Pennsylvania:		
	Anthracite -----	88,995,061	16.8
	Bituminous -----	157,955,137	29.7
2	West Virginia -----	77,184,069	14.5
3	Illinois -----	58,829,576	11.1
4	Ohio -----	22,434,691	4.2
5	Kentucky -----	21,361,674	4.0
6	Indiana -----	17,006,152	3.2
7	Alabama -----	14,927,937	2.8
8	Colorado -----	8,624,980	1.6
9	Virginia -----	8,122,596	1.5
10	Iowa -----	7,614,143	1.4

VALUE

Rank	State	Value	Percentage of Total Value
1	Pennsylvania:		
	Anthracite -----	\$184,653,498	26.9
	Bituminous -----	167,419,705	24.4
2	West Virginia -----	74,561,349	10.8
3	Illinois -----	64,622,471	9.4
4	Ohio -----	24,207,075	3.5
5	Kentucky -----	21,494,008	3.1
6	Alabama -----	19,066,043	2.8
7	Indiana -----	18,637,476	2.7
8	Colorado -----	13,599,264	2.0
9	Iowa -----	13,577,608	2.0
10	Kansas -----	11,360,630	1.6

²From Advance Chapters of Mineral Resources of the United States for 1915.

CLAY AND CLAY PRODUCTS.

The value of clay and clay products in Iowa in 1915 was \$6,749,088, a figure that has not been exceeded in the history of the clay industry in the state. Previous to 1915 the year 1914 held the record for value of production, in which year the value was \$6,405,995.

The following table shows the value of clay and clay products of Iowa during each year from 1906 to 1915.

PRODUCTION OF CLAY AND CLAY PRODUCTS IN IOWA
FROM 1906 TO 1915.

Year	Value
1906	\$3,477,237
1907	3,733,476
1908	4,078,627
1909	4,916,513
1910	5,335,036
1911	4,436,839
1912	4,524,492
1913	5,575,531
1914	6,405,995
1915	6,749,088

The output of clay and clay products in 1914 and 1915 was distributed as follows:

Product	1914		1915	
	Quantity in Thousands	Value	Quantity in Thousands	Value
Common brick	143,534	\$1,067,746	125,752	\$ 898,851
Paving brick or block	14,997	211,905	30,573	300,785
Face brick	11,183	148,394	11,916	153,324
Drain tile		3,180,836		3,802,599
Sewer pipe		558,751		448,721
Fireproofing		1,083,397		1,008,457
Other products		150,716		130,878
Clay		4,250		5,473
Total		\$6,405,995		\$ 6,749,088

The clay product in 1915 is tabulated by counties in Table III, in which the distribution of the leading products is given.

TABLE III

Value of Iowa Clay and Clay Products for 1915, Tabulated By Counties

Counties	No. of Producers	Common Brick	Paving Brick or Block	Face Brick	Drain Tile	Other Products†	Total Value
Adair	1	*			*		*
Allamakee	1					*	*
Appanoose	1	*					*
Audubon	2	*			*	*	*
Benton	5	\$ 4,050			\$ 28,894	*	*
Boone	3	43,192	*	*	*	*	128,257
Buena Vista	3	*			25,577		*
Calhoun	1	*			*	*	*
Cass	1	*			*	*	*
Cedar	1	*			*		*
Cerro Gordo	7	25,856			1,417,908	\$ 386,456	1,830,220
Clay	1	*			*		*
Clinton	2	*			*		*
Dallas	6	5,394		*	221,346	57,240	*
Delaware	1	*					*
Des Moines	1	*			*		*
Dubuque	3	20,337					20,337
Fayette	1	*			*	*	*
Floyd	1	*			*	*	*
Franklin	1	*			*	*	*
Fremont	1	*					*
Grundy	1	*		*			*
Guthrie	2	*			*	*	*
Hamilton	2	*				*	*
Hancock	1				*		*
Hardin	1				*		*
Henry	2	*			*	*	*
Howard	1	*			*	*	*
Humboldt	1				*		*
Iowa	2	*			*		*
Jasper	4	6,850			16,300	*	*
Jefferson	3	*			23,402	*	29,493
Johnson	2	*			*		*
Jones	2	*			*	*	*
Keokuk	8	2,648			175,689	*	*
Kossuth	1	*			*	*	*
Lee	3	2,980		*			*
Linn	4	20,855			4,820		25,675
Louisa	1	*			*	*	*
Mahaska	2	*	*		*	*	*
Marion	4	6,177	*		25,777	46,247	*
Marshall	2	*			*	*	*
Mills	4	3,775					3,775
Monroe	1				*	*	*
Muscatine	4	12,384			*	*	14,884

TABLE III—Continued

Counties	No. of Producers	Common Brick	Paving Brick or Block	Face Brick	Drain Tile	Other Products†	Total Value
Page -----	2	*			*	*	*
Plymouth -----	1	*					*
Polk -----	10	140,195	204,744	*	151,233	*	791,371
Pottawattamie -----	3	23,303					23,303
Poweshiek -----	4	3,036	*		30,722	*	37,147
Sac -----	1	*			*	*	*
Scott -----	4	8,385	*		*	*	30,833
Story -----	2	*	*	*	*	*	*
Tama -----	6	16,186		*	25,222	*	55,458
Union -----	1	*		*	*	*	*
Van Buren -----	2	*			*	*	*
Wapello -----	3	27,790	*	5,050	*	*	83,662
Warren -----	2	*			*	*	*
Washington -----	4	7,942			23,324	9,016	40,282
Webster -----	10	71,690	*		696,329	478,412	*
Winnebago -----	1				*		*
Winneshiek -----	1	*					*
Woodbury -----	1	*	*			*	*
Wright -----	1	*			*		*
**Pottery and clay sold							10,898
Counties with less than three producers -----		445,826	96,041	148,324	935,556	605,336	3,623,493
Totals -----	161	\$ 898,851	\$ 300,785	\$153,324	\$3,802,599	\$1,582,707	\$6,749,088

†Includes sewer pipe, fireproofing, etc.

*Included in "Counties with less than three producers."

**Black Hawk, Hardin, Muscatine, Wapello, Webster and Woodbury counties.

The following table shows the rank of the ten leading states in value of clay products in 1915. It includes also the number of operating firms and the percentage of the total value produced by each of the ten states:

TEN LEADING STATES IN VALUE OF CLAY PRODUCTION IN
1914 AND 1915*.

1914.

State	Rank	Number of Operating Firms Reporting	Value not including Raw Clay Sold	Percentage of Total Value
Ohio	1	543	\$37,166,768	22.53
Pennsylvania	2	369	21,846,996	13.24
New Jersey	3	148	16,484,652	9.99
Illinois	4	263	13,318,953	8.07
New York	5	205	9,078,933	5.50
Indiana	6	240	7,655,285	4.64
Iowa	7	171	6,401,745	3.88
Missouri	8	98	6,077,284	3.68
West Virginia	9	58	5,761,411	3.49
California	10	84	4,461,661	2.70

1915.

State	Rank	Number of Operating Firms Reporting	Value not including Raw Clay Sold	Percentage of Total Value
Ohio	1	524	\$36,839,621	22.58
Pennsylvania	2	352	22,726,031	13.93
New Jersey	3	149	15,965,418	9.79
Illinois	4	247	14,791,938	9.07
New York	5	192	9,489,002	5.82
Indiana	6	221	7,090,630	4.35
Iowa	7	161	6,743,615	4.13
Missouri	8	58	6,284,527	3.85
West Virginia	9	89	5,431,569	3.33
California	10	82	3,599,375	2.21

From this table it will be seen that in 1915 Iowa ranked seventh among the states of the country.

*Advance Chapter from Mineral Resources of the United States for 1915.

The three principal clay products in order of value in 1915 were drain tile, fireproofing and common brick. Cerro Gordo county continued to be the chief producer of clay and clay products, the value of the output in 1915 being \$1,830,220, to which value drain tile alone contributed \$1,417,908.

The value of drain tile and common brick sold in Iowa in the past ten years has been as follows:

PRODUCTION OF DRAIN TILE AND COMMON BRICK IN IOWA FROM
1906 TO 1915.

Year	Drain Tile	Common Brick
1906	\$ 1,721,614	\$ 1,125,009
1907	2,011,793	1,085,333
1908	2,522,363	896,890
1909	2,830,910	1,072,340
1910	3,457,455	1,088,266
1911	2,468,962	1,025,011
1912	2,293,084	1,017,097
1913	2,798,816	1,052,036
1914	3,180,836	1,067,746
1915	3,802,599	898,851

STONE AND LIME.

The value of stone and lime produced in Iowa in 1915 was \$577,295. The distribution of output in 1915 with the distribution in 1914 for comparison is as follows:

	1914	1915
Limestone—		
Building	\$ 32,332	\$ 32,665
Riprap and rubble	96,482	106,064
Crushed Stone—		
Road making	17,438	28,315
Railroad ballast	97,747	78,886
Concrete	278,071	261,541
*Other purposes	15,292	28,185
Lime	56,000	41,120
Total limestone and lime	\$ 593,362	\$ 576,776
Sandstone	1,319	519
Total stone and lime	\$ 594,681	\$ 577,295

*Paving, curbing, flagging, etc.

The distribution of limestone and lime in 1915 is given by counties in Table IV.

TABLE IV

Production of Limestone and Lime in 1915.

Counties	No. of Producers	Building Stone	Riprap and Rubble	Crushed Stone			Lime	Other Uses	Total Value
				Road making	Railroad Ballast	Concrete			
Allamakee -----	3	*					*	\$ 4,123	
Appanoose -----	1			*				*	
Benton -----	1							*	
Black Hawk -----	5	*		*		\$ 3,526	*	8,028	
Cerro Gordo -----	1		*				*	*	
Clayton -----	2	*		*		*		*	
Clinton -----	1	*	*					*	
Des Moines -----	2		*					*	
Dubuque -----	9	\$ 4,190	\$ 28,908	*		*	*	68,512	
Fayette -----	1	*						*	
Floyd -----	1		*					*	
Hardin -----	2					*		*	
Harrison -----	1	*						*	
Henry -----	1	*		*				*	
Howard -----	1	*		*		*		*	
Jackson -----	2			*			*	*	
Jones -----	5	*	11,467	*	*	43,728	*	72,018	
Lee -----	4		14,237	*		*	*	53,842	
Linn -----	2		*	*		*	*	*	
Louisa -----	1	*						*	
Madison -----	2		*			*	*	*	
Marshall -----	2		*		*			*	
Mitchell -----	2	*	*			*		*	
Montgomery -----	1						*	*	
Muscatine -----	1		*					*	
Pocahontas -----	1					*		*	
Scott -----	6	*	23,990	*	*	79,327	*	119,167	
Van Buren -----	2	*						*	
Wapello -----	1		*	*				*	
Counties with less than three producers -----		28,475	27,462	\$ 28,315	\$ 78,886	134,960	\$ 41,120	\$ 28,185	251,086
Total -----		\$ 32,665	\$ 106,064	\$ 28,315	\$ 78,886	\$ 261,541	\$ 41,120	\$ 28,185	\$ 576,776

LIMESTONE AND LIME

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*Included in "Counties with less than three producers."

SAND AND GRAVEL.

The value of sand and gravel produced in Iowa in 1915 was \$720,795. The value of output for the previous year was only \$556,868.

The sand and gravel sold in 1915 may be classified as follows, and in order that comparison may be made with 1914 the classification for that year is given also:

Kind—	1914	1915
	Value	Value
Sand used for—		
Molding -----	\$ 2,365	\$ 160
Building -----	272,445	262,587
Engine -----	3,250	9,353
Other sand -----	72,988	195,368
Gravel -----	205,820	313,327
Total sand and gravel -----	\$ 556,868	\$ 720,795

Table V shows the distribution of sand and gravel by counties in 1915.

TABLE V

Value of Sand and Gravel Produced in Iowa in 1915.

Counties	No. of Producers	Molding Sand	Building Sand	Engine Sand	Other Sand	Gravel	Total
Audubon	3		\$ 205				\$ 205
Black Hawk	6		7,375			\$ 52,940	60,315
Boone	1		*			*	*
Bremer	4		*			1,310	1,760
Buena Vista	2					*	*
Butler	2		*			*	*
Carroll	1					*	*
Cherokee	3		11,900		*	*	25,301
Chickasaw	1					*	*
Clayton	1				*		*
Clinton	6		3,046			12,499	15,545
Des Moines	3		*	*	*	*	16,802
Dickinson	2		*			*	*
Dubuque	4		6,649			*	19,674
Emmet	1					*	*
Fayette	3		*		*		14,218
Floyd	1					*	*
Franklin	5		598		*	475	1,100
Hardin	3		*	*	*	*	9,900
Howard	1					*	*
Ida	2		*				*
Jackson	1		*			*	*
Johnson	2		*		*	*	*
Jones	1					*	*
Kossuth	1		*				*
Lee	2		*	*			*
Linn	5		*			18,451	34,695
Lyon	3		*		*	12,509	39,921
Marion	3		*		*	*	14,114
Marshall	1		*	*	*	*	*
Muscatine	4		*		\$ 10,055	21,427	46,482
O'Brien	4		3,530		*	*	5,836
Osceola	2		*			*	*
Palo Alto	3		*		*	*	30,022
Plymouth	5		3,884		*	2,100	12,484
Polk	13		70,482	\$ 3,492	49,345	23,317	146,636
Sac	2		*	*	*	*	*
Scott	1		*				*
Sioux	5		5,240			*	8,510
Story	3		*		*	*	6,997
Van Buren	1		*			*	*
Wapello	2	*	*		*	*	*
Webster	2		*		*	*	*
Winnebago	1		*				*
Winneshiek	1		*		*	*	*
Woodbury	1		*				*
Wright	2		*			*	*
Counties with less than three producers		160	149,678	5,861	75,968	168,299	210,278
Total		\$ 160	\$ 262,587	\$ 9,353	\$ 135,368	\$ 313,327	\$ 720,795

*Included in "Counties with less than three producers."

GYPSUM.

In 1915 the value of gypsum produced in Iowa was \$1,278,128; in 1914 the value of the output was \$1,321,457. Although New York produces a greater quantity of gypsum yearly than Iowa produces, the value of the Iowa product now exceeds the value of the output of New York. Iowa, therefore, ranks first in value of production among the states producing gypsum in the United States. The total production of gypsum in the state comes from Webster county, where the evidence indicates that there is an abundant supply for future needs.

There is an important deposit of gypsum at Centerville, but thus far no production has come from this locality. The main reason for the lack of production is the difficulty in handling the large amount of water which enters the shaft a few feet above the gypsum.

The value of the gypsum produced in Iowa during each of the past ten years is as follows:

PRODUCTION OF GYPSUM IN IOWA FROM 1906 TO 1915 INCLUSIVE.

Year	Value
1906 -----	\$ 573,498
1907 -----	730,383
1908 -----	564,688
1909 -----	655,602
1910 -----	943,849
1911 -----	871,752
1912 -----	845,628
1913 -----	1,157,939
1914 -----	1,321,457
1915 -----	1,278,128

The principal items of production and distribution in 1915, and for 1914 for comparison, are as follows:

	1914		1915	
	Short Tons	Value	Short tons	Value
Crude gypsum mined.....	480,404	-----	495,860	-----
Distributed as follows:				
Sold crude—				
To Portland cement mills, as land plaster, etc.....	65,185	\$ 60,486	71,909	\$ 59,930
Sold calcined—				
As hard wall plaster.....	265,619	1,109,570	256,063	1,057,546
As stucco, plaster of Paris, etc.	69,446	151,401	78,994	160,652
Total sold calcined.....	335,065	\$ 1,260,971	335,057	\$ 1,218,198
Total sold	400,250	\$ 1,321,457	406,966	\$ 1,278,128

LEAD AND ZINC.

In 1915 there was no production of lead and zinc in the state.

MINERAL WATERS.

The value of mineral waters sold in Iowa in 1915 was \$18,534; in 1914 the value was \$30,179. There were eight commercial springs in 1915, from which 198,739 gallons were sold for medicinal and table uses. The average price per gallon was nine cents. The eight springs reporting sales are as follows:

Colfax Mineral Spring, Colfax, Jasper county.

Colfax Grand Spring, Colfax, Jasper county.

Crystal Spring, Estherville, Emmet county.

Egralharve Spring, Montgomery, Dickinson county.

Hawkeye Hygeia Spring, Sioux City, Woodbury county.

Hestons Spring, Jefferson county.

Red Mineral Springs, Eddyville, Wapello county.

White Sulphur Spring, near Davenport, Scott county.

PORTLAND CEMENT.

In 1915 the three cement plants of Iowa, two of which are at Mason City, the third at Des Moines, produced cement to the value of \$4,119,952, which is the record figure for the state.

The figures for the quantity and value of the Portland cement shipped by the ten leading states in 1915 are as follows:

SHIPMENT OF PORTLAND CEMENT BY STATES, 1915⁴

State	Shipping Plants	Quantity (barrels)	Value	Average Price per Barrel
Pennsylvania -----	20	28,188,450	\$20,252,961	\$.718
Indiana -----	5	8,577,513	7,336,821	.855
Illinois -----	5	5,435,655	4,884,026	.899
New York -----	8	5,275,101	4,039,215	.766
Michigan -----	11	4,727,768	4,454,608	.942
Missouri -----	5	4,628,484	4,007,679	.866
Iowa -----	3	4,590,336	4,119,952	.898
California -----	7	4,532,452	6,338,918	1.399
Kansas -----	10	3,780,735	2,826,443	.748
Ohio -----	5	1,961,409	1,917,920	.978
Total (ten states) -----	79	71,697,903	\$60,178,543	-----
Total (other states) -----	32	15,196,778	14,578,131	-----

NATURAL GAS.

The production of natural gas in Iowa in 1915 came from four shallow wells in Louisa county. The gas is obtained from sand pockets in the glacial deposits, and is used for lighting three dwellings. In many places in Iowa small amounts of gas have been found having the same relations to the drift deposits as has the gas of Louisa county. Gas in commercial quantities has not yet been found in any of the wells that have been drilled for water in the indurated rocks of the state.

IRON ORE.

In 1915 the Missouri Iron Company continued its investigations on the Waukon iron ores, but no ore was placed upon the market.

⁴Advance chapter from mineral resources of the United States for 1915.